

## **“METHOD FOR PRODUCING A VIABLE SPEECH RENDITION OF TEXT”**

### ABSTRACT OF THE INVENTION

A method for producing a viable speech rendition of text based on dividing the words of  
5 the sentence into component diphones. Analysis of the structure of the sentence is utilized to  
correctly pronounce homographs. Proper inflection, based on the punctuation of the sentence, is  
added to produce a more appealing rendition. The invention has particular application for  
permitting blind persons to receive information previously in text form and, hence, unavailable.  
The invention is highly versatile, user friendly and the overall flow of sounds highly  
understandable. A phonetic dictionary is aligned so that each letter within each word has a single  
corresponding phoneme. The aligned dictionary is analyzed to determine the most common  
phoneme representation of the letter in the context of a string of letters before and after it. The  
results for each letter are stored in a phoneme rule matrix. A diphone database is then created by  
using a waive editor to cut 2,000 distinct diphones out of specially selected words. An algorithm  
used with the invention selects a phoneme for each letter. Then, two phonemes at a time are used  
to create a diphone, which are then read aloud by concatenating sounds from the diphone  
database. Another algorithm is used to distinguish and use the correct form of homograph.  
Finally, the invention uses prosodic variation by adding inflection to the final word of a  
sentence in accordance with punctuation, e.g. question marks, periods and exclamation marks, to  
enhance the realism of the program. Three macros were created to allow aspects of the  
20 program to run at the touch of a single button. A 98% accuracy rate has been achieved.